



REVISED CLEANUP PLAN SOUTH PLANT SITE

Trinity Industries, Inc.
Greenville, Pennsylvania

VOLUME 2 OF 4

Submitted To: Pennsylvania Department of Environmental Protection
Environmental Cleanup Program
230 Chestnut Street
Meadville, PA 16335-3481

Submitted By: Trinity Industries, Inc.
2525 Stemmons Freeway
Dallas, TX 75207

Prepared By: Golder Associates Inc.
Spring Mill Corporate Center
555 North Lane, Suite 6057
Conshohocken, PA 19428 USA

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February 2013

Project No.: 073-6009-100

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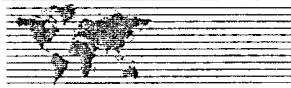




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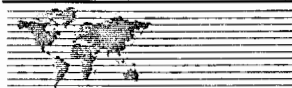
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APPENDIX A

CORRESPONDENCE WITH PADEP REGARDING CLEANUP PLAN

APPENDIX A-1

JUNE 7, 2011 PADEP LETTER

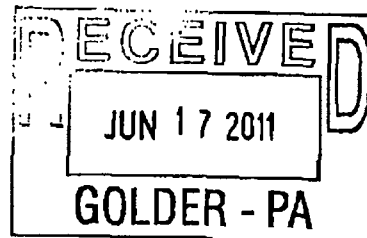


pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION
NORTHWEST REGIONAL OFFICE

June 7, 2011

Terry Barrett, P.G.
Remediation Projects Manager
Trinity Industries, Inc.
2525 Stemmons Freeway
Dallas, TX 75207



Re: Cleanup Work Plan - South Plant Site
(Approval with Modifications)
March 28, 2011
Trinity Industries, Inc.
Facility ID No. 690370
City of Greenville, Mercer County

Dear Mr. Barrett:

The Pennsylvania Department of Environmental Protection (Department) has reviewed the above-referenced Cleanup Work Plan received on March 28, 2011. The Plan was prepared by Golder Associates, Inc. and submitted on behalf of Trinity Industries, Inc. in accordance with Paragraph 3.g. of the December 21, 2006, Consent Order and Agreement between Trinity Industries, Inc. and the Department.

The Cleanup Work Plan is not a document required to be submitted or approved under the Land Recycling and Environmental Remediation Standards Act, Act of May 19, 1995, P.L. 4, 35 P.S. §§6026.101-6026.908 (Act 2) or its regulations. The Department understands that the Cleanup Work Plan proposes a conceptual approach to Trinity's proposed cleanup of the South Plant Site. Trinity's formal submission of a "Cleanup Plan," as that term is used in Act 2 and its regulations will follow the Department's approval of this Cleanup Work Plan. The Department reserves its right to approve or disapprove the formal Cleanup Plan in accordance with Act 2.

In accordance with Paragraph 17 of the Consent Order and Agreement, the Department hereby approves the Cleanup Work Plan with the following modifications and provides comments for Trinity's consideration in preparing the Cleanup Plan required by Act 2:

Soils:

Trinity selected the Act 2 Non-Use Aquifer Standard for groundwater and soil media at this site. Selection of this standard requires a Department-approved Non-Use Aquifer Determination in accordance with 25 Pa. Code §250.303. Trinity has not requested approval of a Non-use Aquifer Determination. It is unlikely that a Non-use Aquifer Determination could be approved due to

known off-property groundwater use in hydrogeologically downgradient locations. It should also be noted that the Non-Use Aquifer Statewide Health Standard could not be used to address the historical fill at the site.

Contaminants of Concern:

All contaminants found to exceed the Act 2 Statewide Health Standard or a Practical Quantitation Limit (PQL) during the remedial investigation should be addressed in the Cleanup Plan, Risk Assessment (if necessary), and the Final Report.

Groundwater:

As stated above, Trinity has not requested approval of a Non-Use Aquifer Determination. Accordingly, the use of a non-use aquifer standard for the site is not appropriate. If Trinity intends on utilizing the non-use aquifer standard, they will need to demonstrate that they meet the non-use requirements under Section 250.303 of the Department's regulations. The Cleanup Work Plan identifies downgradient potable wells that are finished in bedrock and implies that the bedrock and overburden aquifers are not hydraulically connected. However, the Remedial Investigation Report contains no data that provides a justification for making this determination.

Historic Fill/Waste:

The Cleanup Work Plan proposes that the historic fill in the disposal areas (AOC-1, AOC-11, and AOC-17) will be further evaluated utilizing TCLP samples for hazardous waste determination. Trinity also plans on TCLP sampling the areas with lead levels in surface soil above 1,000 mg/kg, including the Disposal Areas, Former Operating Areas, and the Western Drainage Ditch and two down-gradient areas, to determine if the material in these areas is hazardous. If any of the waste material is determined to be hazardous, the material must be either excavated and removed for off-site disposal or capped in place on-site by following 40 CFR 265.310 or 40 CFR 264.310, depending on whether disposal occurred after September 26, 1982. Trinity should develop a sampling plan based on what level of lead in the sand material is determined to be hazardous.

The Remedial Investigation Report concludes that almost the entire site exists on residual fill/"tan sand" as indicated on Figure 4-1, *Site Geologic Cross Sections*, from the Remedial Investigation Report - South Plant. This residual fill/tan sand appears to have been placed before 1988 and would therefore meet the definition of "historic fill" contained in the Department's Management of Fill Policy, dated April 24, 2004. If the concentrations of regulated substances in this historic fill exceed the values in Tables FP-1a and b of the *Management of Fill Policy*, then this historic fill is considered "regulated fill" and a waste under the Department's *Management of Fill Policy* and the Solid Waste Management Act.

As indicated above, any of this historic fill meeting the definition of a "hazardous waste" would require either removal for proper off-site disposal, or capping in place in accordance with applicable state and federal laws and regulations.

The historic fill containing lead levels above 450 mg/kg would be considered a waste and would require management as a residual waste or hazardous waste by either removal off-site for appropriate disposal or consolidation on-site under an appropriate cap. Act 2 relief from liability may be obtained for areas where confirmation sampling verifies all material in excess of 450 mg/kg was removed for disposal or consolidated for capping in place.

The waste disposed in the Old Ball Field Area was disposed after 1980 and requires removal for proper disposal or capping in place under the Department's residual waste regulations or, if the waste is determined to be hazardous, appropriate State and Federal regulations. A synthetic cap and two feet of soil capable of supporting vegetation will be required for capping any residual waste.

The waste may be consolidated from the Former Operating Areas at the site into the 3 disposal areas (AOC-1, AOC-11, and AOC-17) and then capped in place with the synthetic cover and 2 feet of vegetated soil as planned. Any hazardous waste would require either removal for proper off-site disposal or capping in place, adhering to applicable state and federal laws and regulations.

It should be noted that some of the waste in the Disposal Areas and Former Operating Areas is in contact with or below the water table. The Cleanup Plan should include appropriate measures to remedy this condition.

Miscellaneous:

The vapor intrusion and sediment data collection and evaluation should be completed prior to the submission of the Cleanup Plan. Any remedies based on the collected data evaluations should be included in the Cleanup Plan.

The drawings and any engineered designs in the Cleanup Plan will need to be certified by a Registered Professional Engineer licensed in Pennsylvania. The groundwater aspects of the Cleanup Plan need to be certified by a Registered Professional Geologist licensed in Pennsylvania.

Terry Barrett, P.G.

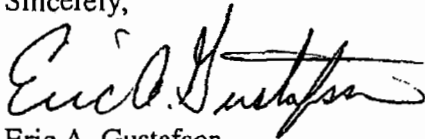
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June 7, 2011

Therefore, the Department has decided to approve the Cleanup Work Plan with the modification that a Cleanup Plan be submitted in accordance with Act 2 that, in addition to meeting the procedural and substantive requirements of Act 2 and its regulations, addresses the issues identified above.

If you have any questions or need further information regarding this matter, please contact Ms. Kristie Shimko at 814.678.6189.

Sincerely,

A handwritten signature in black ink, appearing to read "Eric A. Gustafson". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Eric A. Gustafson
Regional Manager
Environmental Cleanup

cc: John O'Hara, P.G.
Kristie Shimko
Clem DeLattre
Doug Moorehead
Grant Dufficy (USEPA)
Joseph Gormley, Jr., P.E.
Kim Bontrager
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APPENDIX A-2

APRIL 27, 2012 PADEP LETTER



pennsylvania

DEPARTMENT OF ENVIRONMENTAL PROTECTION
NORTHWEST REGIONAL OFFICE

April 27, 2012

CERTIFIED MAIL NO.7011 1570 0000 9053 1480

Mr. Terry Barrett
Remediation Projects Manager
Trinity Industries, Inc.
2525 Stemmons Freeway
Dallas, TX 75207

Re: Cleanup Plan-South Plant Site
Disapproval
Trinity Industries, Inc.
Facility ID No. 731732
Borough of Greenville, Mercer County

Dear Mr. Barrett:

The Department of Environmental Protection (Department) has received and reviewed the January 30, 2012, document titled, "Cleanup Plan-South Plant Site" for the property located at 100 York Street, Greenville. The Cleanup Plan was prepared by Golder Associates, Inc. and submitted to the Department in accordance with the Land Recycling and Environmental Remediation Standards Act (Act 2) and constitutes a Cleanup Plan as defined in Chapter 3, Section 304 of the Act.

The Department notes the following deficiencies in the Cleanup Plan and disapproves it in accordance with the provisions of Act 2:

1. As indicated in previous submissions to the Department, most of this site contains fill consisting of waste process sand. In several sections of the Cleanup Plan it is stated that the Act 2 Statewide Health Standard (SHS) would be applied to this waste process sand. The SHS is available for soil and groundwater media only. If the waste process sand is non-hazardous and its placement occurred prior to September 7, 1980, closure of the site-wide waste process sand areas can be addressed through demonstrating an Act 2 Site-Specific Standard in accordance with 250 Subchapter D. This may be done through capping and/or excavation to achieve pathway elimination utilizing the Act 2 SHS Medium Specific Concentrations (MSCs) to determine the limits of capping and/or excavation. Under this scenario, Act 2 relief from liability would be limited to the area capped or excavated. Alternatively, Trinity may elect to address the site-wide waste process sand by demonstrating that it meets a risk-based numeric Act 2 Site-Specific Standard (SSS). This alternative would require a residual risk assessment following any remediation (e.g., capping, excavation).

2. Table 2-1 titled, "Summary of COC Exceedences by AOC," indicates that manganese is a naturally occurring contaminant at AOC-13 for 'surface soils'. However, on May 13, 2011, Trinity acknowledged that the entire site is situated on historical fill. Therefore, a conclusion that manganese in fill is naturally occurring is inappropriate and should be revised in the future submittal.
3. In accordance with 25 Pa. Code §250.410(b), the remediator should submit the details of the proposed in-situ (soil) stabilization discussed in both the main report summary and Appendix C, Section 02221, Subsection 3.04(A)(3). Additionally, the remediator should provide the details of the plans for the excavated material associated with the sedimentation basin (i.e. sampling, storage, and disposal).
4. Outfalls OF-5 and OF-6 are included in the sampling plan, but are not depicted on any of the drawings. These should be included in accordance with 25 Pa. Code §250.410 in the revised report.
5. Because the Cleanup Plan proposes to leave waste in place below the water table, in order for the Department to approve this approach, Trinity must perform surface water sampling to ensure that the waste material is not currently impacting Mathay Run and the Old Erie Canal above Chapter 16 and Chapter 93 surface water criteria. Samples taken from Mathay Run and the Old Erie Canal should be collected during both low flow periods and after storm events to evaluate the impact of diffuse flow of groundwater to the streams during these conditions. Sampling points should be appropriately stationed where the impacts of groundwater to surface water would be most apparent (i.e. disposal areas adjacent to the stream). The results from the sampling should be included in the revised Cleanup Plan.
6. According to the Department's January 13, 2010, disapproval letter concerning the Remedial Investigation Report (South Plant), Trinity was to provide a full and complete ecological assessment based on the appropriate attainment standard selected and include this evaluation in the Cleanup Plan in accordance with 25 Pa. Code §250.311. However, the Cleanup Plan does not include an ecological assessment. Because the Department has already determined that there is at least one candidate species on the site and Trinity is seeking attainment of the Site-Specific Standard, Trinity must have a qualified individual perform a Site-Specific Ecological Risk Assessment of the site. The report, data, and findings should be included in the revised Cleanup Plan in accordance with 25 Pa. Code §250.402.
7. The 2011 "Clean Up Work Plan-South Site" concluded that sediments impacted above the United States Environmental Protection Agency, Region 3, Biological Technical Assistance Group, Freshwater Sediment Screening Benchmarks, may be site related.

(detections of contaminants found in sediments correlate to AOC-S3 for lead, manganese, and zinc). Trinity now concludes in the Cleanup Plan that the impacts to sediments are not 'site-related' and are likely related to off-site impacts. However, Trinity had a National Pollutant Discharge Elimination System (NPDES) permit (No. PAR808323) for discharge to Erie Extension Canal for Outfalls No. 1, No. 2, and No. 3. It is noted on the NPDES application that these outfalls drained approximately 55 acres of the facility to the Erie Extension Canal. Additionally, Trinity Industries-North Plant Site's stormwater discharges into the Old Erie Canal, as noted by Trinity in their "Response to Comments & Revised RI Report-North Plant" letter dated September 2, 2011. Therefore, Trinity will need to address the sediment impacts in accordance with 25 Pa. Code §§250.311 and 250.402, as well as the guidance provided in Section IV.H of the Land Recycling Technical Guidance Manual.

8. Trinity proposes to use a Site-Specific Standard of 3,600 ug/L for Manganese for groundwater migrating off-site. This proposal is contrary to Trinity's conclusion that Mathay Run and the Old Erie Canal act as a hydraulic barrier for contaminants migrating off the South Plant. Moreover, the proposal is specifically prohibited by Paragraph (6)(b) of the 2006 Consent Order and Agreement (COA) which limits Trinity to demonstrating either the Background or the Residential Used Aquifer, Statewide Health Standard at the property line and beyond.
9. Monitoring well MW-13 and MW-14 have only one water level measurement which was performed in September 2011. In addition, these monitoring wells had no sampling analysis conducted for Site Contaminants of Concern (COCs). Because these wells were installed after the submittal and subsequent approval of the Remedial Investigation Report, please refer to 25 Pa. Code §250.408(e) for the appropriate number of sampling events as these wells are being utilized for additional site characterization.
10. This report was sealed by a Professional Engineer but not a Professional Geologist. The Cleanup Work Plan Approval with Modifications letter (June 7, 2011) included language that directed Trinity to certify the Engineering plans/details in the Cleanup Plan by a Professional Engineer and any groundwater aspects to be certified by a Professional Geologist. Therefore, the revised Cleanup Plan should be certified by, both, a Professional Geologist and a Professional Engineer.

General Comments Not Related to the Above-Mentioned Deficiencies:

Trinity concludes that Mathay Run/Old Erie Canal is a hydraulic barrier which intercepts all groundwater contamination leaving the site; thus, preventing groundwater contamination off-site. However, data should be provided in the report to support this conclusion. At a minimum, Trinity should evaluate this conclusion by providing the following: 1) Two quarterly groundwater samples and elevations from MW-13 and MW-14 for site COCs; 2) Concurrent

Mr. Terry Barrett

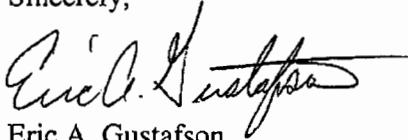
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April 27, 2012

samples and elevations obtained from monitoring wells adjacent to MW-12 and MW-13; 3) Concurrent stream gauge measurements should be obtained; and 4) Concurrent stream samples (for site related COCs) should be collected.

Please submit a revised document addressing the Department's concerns stated in this letter within 90 days. Please keep in mind that Paragraph 19 of the CO&A provides for stipulated penalties in the event the Department must disapprove the second revised Cleanup Plan because the concerns stated in this letter are not addressed. If you have any questions please contact Kristie Shimko at 814.332.6189.

Sincerely,



Eric A. Gustafson
Regional Manager
Environmental Cleanup and Brownfields Program

cc: Grant Dufficy (USEPA)
Joseph Gormley, Jr., P.E.
John O'Hara, P.G. - DEP
Kristie Shimko - DEP
Clem DeLattre - WM
Doug Moorhead - OCC
Kim Bontrager - DEP
File

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APPENDIX A-3

JULY 2, 2012 TRINITY/GOLDER LETTER



July 2, 2012

Project No. 073-6009-100

Eric A. Gustafson
Regional Manager
Environmental Cleanup and Brownfields Program
Pennsylvania Department of Environmental Protection
230 Chestnut Street
Meadville, PA 16335

**RE: RESPONSE TO COMMENTS
CLEANUP PLAN-SOUTH PLANT SITE - DISAPPROVAL
TRINITY INDUSTRIES, INC. FACILITY ID NO. 731732
BOROUGH OF GREENVILLE, MERCER COUNTY**

Dear Mr. Gustafson:

On behalf of Trinity Industries, Inc. (Trinity), Golder Associates Inc. (Golder) has prepared the following letter to respond to the Pennsylvania Department of Environmental Protection's (PADEP) April 27, 2012 letter disapproving the January 30, 2012 Cleanup Plan for the South Plant Site (Site) located at 100 York Street in Greenville, Pennsylvania.

In its April 27, 2012 letter, the PADEP noted that the Cleanup Plan was submitted in accordance with the Land Recycling and Environmental Remediation Standards Act (Act 2) and constitutes a Cleanup Plan as defined in Chapter 3, Section 304 of the Act. However, the PADEP noted several deficiencies in the Cleanup Plan and disapproved it in accordance with the provisions of Act 2.

In response to the disapproval letter, Trinity and Golder met with the PADEP on June 1, 2012 at its office in Meadville, Pennsylvania to discuss the comments, present preliminary responses, and agree to a path going forward for revising the Cleanup Plan for PADEP approval. The following responses are based on the discussions held and agreements reached at the meeting.

COMMENTS AND RESPONSES

PADEP April 27, 2012 disapproval letter comments are shown below in bold italics followed by Trinity's responses in plain text.

PADEP Comment No. 1

As indicated in previous submissions to the Department, most of this site contains fill consisting of waste process sand. In several sections of the Cleanup Plan it is stated that the Act 2 Statewide Health Standard (SHS) would be applied to this waste process sand. The SHS is available for soil and groundwater media only. If the waste process sand is non-hazardous and its placement occurred prior to September 7, 1980, closure of the site-wide waste process sand areas can be addressed through demonstrating an Act 2 Site-Specific Standard in accordance with 250 Subchapter D. This may be done through capping and/or excavation to achieve pathway elimination utilizing the Act 2 SHS Medium Specific Concentrations (MSCs) to determine the limits of capping and/or excavation. Under this scenario, Act 2 relief from liability would be limited to the area capped or excavated. Alternatively, Trinity may elect to address the site-wide waste process sand by demonstrating that it meets a risk-based

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Golder Associates Inc.
200 Century Parkway, Suite C
Mt. Laurel, NJ 08054 USA

Tel: (856) 793-2005 Fax: (856) 793-2006 www.golder.com



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numeric Act 2 Site-Specific Standard (SSS). This alternative would require a residual risk assessment following any remediation (e.g., capping, excavation).

Response to PADEP Comment #1

Most of the Site contains grading fill (i.e., historic/structural fill) and not waste process sand. Trinity has previously provided the following information that shows the historic development of the Site and the distinction between grading fill and waste disposal areas including the waste process sand area.

- Final Revised Remedial Investigation Work Plan – October 2007
 - Appendix I – South Plant 1949 Survey Drawing
- Revised Supplemental Investigation Work Plan – South Plant – October 2008
 - Figure 3 – Fill Thickness South Plant
- Revised Remedial Investigation Report – South Plant – Mar 2010
 - Figure 2-7 – Historical Aerial Photographs
 - Figure 4-1 – Site Geologic Cross Sections
 - Appendix D – Historical Documentation of Waste Sand Disposal Area and Site Drainage

As shown on the above documents and described in the June 1, 2012 meeting with the PADEP, the northeast and north central portions of South Plant were developed first starting in 1911, after which plant expansion continued to the west and to the south. Grading fill was used to level the Site prior to development, construction, and startup of the operations that generated the waste process sand. At least for the northeast and north central portions of South Plant, waste sand wasn't even available until after production operations started. The furthest extent of Site development can be seen on the historic aerial for 1968, which includes the waste process sand disposal area. Therefore, it can be concluded that the grading fill was placed before September 7, 1980.

Figure 1A (see attachment) shows the depth and extent of fill across the Site. This figure shows a clear distinction between grading fill used to level the Site for development and the historic disposal areas (i.e., waste process sand disposal area and the Old Ballfield area).

Figure 1B (see attachment) shows the proposed excavation areas from the Cleanup Plan in relation to the types of fill encountered at the Site. This figure shows that both the grading fill and waste disposal areas have been investigated and that releases within the grading fill have been identified and delineated.

In the Revised Cleanup Plan Trinity will provide information to demonstrate the following:

- Grading fill was placed on-Site prior to operations and the furthest extent of this fill was placed before September 7, 1980
- The waste process sand identified in the RI Report is separate and distinct from the grading fill
- On-Site releases to grading fill have been identified and delineated

From our meeting discussions, Trinity understands that PADEP's guidelines for addressing historic fill are evolving and that the current guidelines do not allow the use of Statewide Health Standards (SHS) for historic fill. Therefore, Trinity will revise the Cleanup Plan to note that the Site Specific Standard will be used for those locations where 1) grading fill and/or soils have been impacted by releases and 2) are being addressed in accordance with the 2006 Consent Order and Agreement (COA). The Site Specific Standard will be pathway elimination through 1) excavation of impacted grading fill/soil within the former operation/drainage areas and 2) capping of the former disposal areas. The impacted

grading fill/soil areas are defined as those areas with multiple related exceedances of the Statewide Health Standards (SHSs) and they are generally defined by the limits of grading fill/soil exceeding 450 mg/kg of lead.

For all other areas of the Site, Trinity will consider a residual risk assessment to 1) demonstrate that the remaining grading fill/soils meet a risk-based numeric standard for non-residential use and 2) obtain relief from liability under Act 2.

Comment No. 2

Table 2-1 titled, "Summary of COC Exceedences by AOC," indicates that manganese is a naturally occurring contaminant. at AOC-13 for 'surface soils'. However, on May 13, 2011, Trinity acknowledged that the entire site is situated on historical fill. Therefore, a conclusion that manganese in fill is naturally occurring is inappropriate and should be revised in the future submittal.

Response to PADEP Comment #2

In the Revised Cleanup Plan, Trinity will update the text to note that this and similar manganese concentrations are indicative of background concentrations in on-Site soil or grading fill rather than evidence of a release. In addition, the text will note that these concentrations are below the Pennsylvania Clean Fill criteria of 31,000 mg/kg for manganese (PADEP Management of Fill Policy; Document # 258-2182-773 - Table FP-1b Clean Fill Concentration Limits For Metals and Inorganics).

Comment No. 3

In accordance with 25 Pa. Code §250.410(b), the remediator should submit the details of the proposed in-situ (soil) stabilization discussed in both the main report summary and Appendix C, Section 02221, Subsection 3.04(A) (3). Additionally, the remediator should provide the details of the plans for the excavated material associated with the sedimentation basin (i.e. sampling, storage, and disposal).

Response to PADEP Comment #3

In the Cleanup Plan, Trinity proposed insitu stabilization as an alternative for addressing impacted grading fill/soils that were potentially below the water table in the former Pickling Area. In the Revised Cleanup Plan, Trinity will provide additional details regarding insitu soil stabilization including vendor screening, results of bench-scale treatability studies, and performance requirements.

In addition, Trinity will provide the requested details regarding the plans for management of the excavated material associated with the sedimentation basin (i.e. sampling, staging, and disposal) in the Revised Cleanup Plan.

Comment No. 4

Outfalls OF-5 and OF-6 are included in the sampling plan, but are not depicted on any of the drawings. These should be included in accordance with 25 Pa. Code §250.410 in the revised report.

Response to PADEP Comment #4

In accordance with 25 Pa. Code §250.410, Trinity provided adequate design plans and specifications and post remediation care/sampling requirements for PADEP to evaluate the remedy. There is no specific reference in §250.410 that requires the inclusion of all post-construction monitoring points in the Cleanup Plan. For most Act 2 sites these specific details are generally not included until the final post remediation monitoring plan, which is part of the Final Report. However, Trinity will add the locations for outfalls OF-5 and OF-6 to the design drawings and sampling plan figures for the Revised Cleanup Plan and will also include them, as required, in the Final Report.

Comment No. 5

Because the Cleanup Plan proposes to leave waste in place below the water table, in order for the Department to approve this approach, Trinity must perform surface water sampling to ensure that the waste material is not currently impacting Mathay Run and the Old Erie Canal above Chapter 16 and Chapter 93 surface water criteria. Samples taken from Mathay Run and the Old Erie Canal should be collected during both low flow periods and after storm events to evaluate the impact of diffuse flow of groundwater to the streams during these conditions. Sampling points should be appropriately stationed where the impacts of groundwater to surface water would be most apparent (i.e. disposal areas adjacent to the stream). The results from the sampling should be included in the revised Cleanup Plan.

Response to PADEP Comment #5

The majority of waste in the disposal areas is above the water table. The historical records presented in the Remedial Investigation (RI) Report and discussed above show that waste was placed on the surface adjacent to the flood control berm and covered. The records do not indicate that waste was buried in excavated trenches or pits. Therefore, any waste that is found within the groundwater has occurred from the filling of low lying areas in the former flood plain and the subsequent rise in groundwater levels.

Surface water data were collected during the RI and the results were presented in Appendix I-5 of the RI Report. These results showed that there were no exceedances of ambient water quality criteria for aquatic life or human health. As discussed in the June 1, 2012 meeting, Trinity has recently directly compared to the ambient water quality criteria the RI groundwater data (RI Report, Figure 6-7) from those wells that monitor groundwater with the potential to discharge to surface water bodies. This comparison assumes a direct discharge with no dilution. Based on this conservative comparison, several wells have results that are greater than the ambient water quality criteria for human health (three wells for manganese, two wells for PAHs, one well for benzene, and one well for aldrin). However, all of the groundwater results are below the ambient water quality criteria for aquatic life. These results are shown on attached Figure 2. Because the designated use of Mathay Run is a warm water fishery (WWF), the ambient water quality criteria for aquatic life are the appropriate surface water criteria.

To further demonstrate that there are no impacts to surface water from on-Site waste, Trinity will perform additional surface water sampling to confirm the RI results under both low flow conditions and after a storm event. As agreed to at the June 1, 2012 meeting with PADEP, Trinity will include these additional sampling results in the Revised Cleanup Plan.

Comment No. 6

According to the Department's January 13, 2010, disapproval letter concerning the Remedial Investigation Report (South Plant), Trinity was to provide a full and complete ecological assessment based on the appropriate attainment standard selected and include this evaluation in the Cleanup Plan in accordance with 25 Pa. Code §250.311. However, the

Cleanup Plan does not include an ecological assessment. Because the Department has already determined that there is at least one candidate species on the site and Trinity is seeking attainment of the Site-Specific Standard, Trinity must have a qualified individual perform a Site-Specific Ecological Risk Assessment of the site. The report, data, and findings should be included in the revised Cleanup Plan in accordance with 25 Pa. Code §250.402.

Response to PADEP Comment #6

Trinity acknowledges the January 13, 2010 disapproval letter for the RI Report that requested a full and complete ecological risk assessment based on the appropriate attainment standard selected. However, for the record and in the interest of completeness on this issue Trinity also wants to point out that there was additional correspondence related to this subject including the following:

- The March 1, 2010 Response to Comments addressing PADEP's January 13, 2010 disapproval letter and agreeing to perform additional ecological evaluations, as necessary, as part of the Cleanup Plan
- The March 31, 2010 letter from PADEP approving the RI as amended by the Response to Comments
- The March 25, 2011 Cleanup Work Plan proposing to perform additional stormwater drainage and sediment evaluation as part of the pre-design investigations
- The June 7, 2011 letter from PADEP approving the Cleanup Work Plan with no further comments on the proposed sediment evaluation

In addition, it should be noted that PA 25 § 250.405c states that "The baseline risk assessment report is not required if the Department, in its remedial investigation report or cleanup plan approval, determines that a specific remediation measure that eliminates all pathways, other than a no-action remedial alternative, can be implemented to attain the Site-specific standard in accordance with the requirements of attainment demonstration as specified in Subchapter G (relating to demonstration of attainment). A baseline risk assessment is that portion of a risk assessment that evaluates a risk in the absence of the proposed Site-specific measure."

For on-Site soils, Trinity has proposed to either excavate or contain impacted soils and the pathways for human and ecological receptors will be eliminated. Therefore, a baseline risk assessment for soils for either human health or ecology are unnecessary and should not be required as part of this Cleanup Plan.

For sediments in the Old Erie Canal and Mathay Run, the RI data (see attached Figure 3) show that the majority of Constituents of Concern (COCs) exceeding the United States Environmental Protection Agency (USEPA) Region III Biological Technical Assistance Group (BTAG) screening criteria are polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), pesticides, and metals that are not COCs at the Site (see attached Figure 3). In addition, the upstream samples at locations SS-3 and SS-6 show similar exceedances, indicating that the COCs are related to off-Site anthropogenic sources associated with urban stormwater runoff. Furthermore, stormwater evaluations, including dye studies, performed in July 2011 as part of the pre-design investigations showed that there are no direct stormwater discharges from the Site to the Old Erie Canal. Therefore, a baseline risk assessment for sediments for either human health or ecology should not be required as part of this Cleanup Plan.

A more detailed discussion regarding sediment impacts is presented in response to PADEP Comment #7 below.

Comment No. 7

The 2011 "Clean Up Work Plan-South Site" concluded that sediments impacted above the United States Environmental Protection Agency, Region 3, Biological Technical Assistance Group, Freshwater Sediment Screening Benchmarks, may be site related (detections of contaminants found in sediments correlate to AOC-S3 for lead, manganese, and zinc), Trinity now concludes in the Cleanup Plan that the impacts to sediments are not 'site-related' and are likely related to off-site impacts. However, Trinity had a National Pollutant Discharge Elimination System (NPDES) permit (No. PAR808323) for discharge to Erie Extension Canal for Outfalls No. 1, No. 2, and No. 3. It is noted on the NPDES application that these outfalls drained approximately 55 acres of the facility to the Erie Extension Canal. Additionally, Trinity Industries-North Plant Site's stormwater discharges into the Old Erie Canal, as noted by Trinity in their "Response to Comments & Revised RI Report-North Plant" letter dated September 2, 2011. Therefore, Trinity will need to address the sediment impacts in accordance with 25 Pa. Code §§250.311 and 250.402, as well as the guidance provided in Section IV.H of the Land Recycling Technical Guidance Manual.

Response to PADEP Comment #7

Trinity has always maintained that the majority of impacts seen in sediment are related to off-Site sources. Trinity's conclusions and position have not changed with respect to this issue. In response to PADEP questions and concerns, Trinity agreed to perform additional evaluations to determine if observed lead and zinc impacts were potentially related to releases from AOC-S3.

Section 2.7.2 of Trinity's Cleanup Work Plan for the South Plant stated the following:

"Sediment results from the streams were compared to the USEPA Region 3 Biological Technical Assessment Group's (BTAG) Freshwater Sediment Benchmarks, which are screening criteria and not promulgated standards. Several SVOCs, pesticides, and metals exceeded the screening criteria in sediment samples. A high number of exceedances were found in upstream samples of both Mathay Run and the Old Erie Extension Canal, which suggests a potential off-Site source(s) for these COCs. It should also be noted that these COCs are frequently anthropogenic and typically found in urban streams and sediments.

Stream sediment COCs exceeding the screening criteria are shown in Table 5-4 of the RI Report (Golder 2010). Based on the distribution and concentrations of these COCs found in sediment, the COCs appear to be related to point source and non-point source (e.g., stormwater) discharges in the urban watershed. With the exception of lead, manganese, and potentially zinc, the sediment COCs do not correspond with on-Site COCs and; therefore, appear to be from off-Site sources. Additional characterization will be necessary to determine the extent of the correlation, if any, between the presence of the COCs lead, manganese, and zinc on-Site and their presence in potentially impacted sediments."

Section 4.3 of the Cleanup Work Plan further stated the following:

"The sediment benchmarks are screening criteria and not cleanup standards. Exceedances of the screening criteria indicate there is a potential risk to aquatic biota, but they do not trigger sediment cleanups actions without additional consideration.

For the sediment areas, Trinity proposes the following response actions to determine if COCs in sediment are related to Site activities and if further actions are warranted.

- *Additional investigations of the Site drainage systems and outfalls leading to Old Erie Canal*

■ *Further evaluation of the existing sediment data versus sediment databases and sediment cleanup criteria"*

The drainage system investigation was performed as part of the pre-design investigations and the results of this evaluation were presented in the Cleanup Plan. The drainage evaluation concluded that there was no direct discharge of stormwater from the Site to the Old Erie Canal or Mathay Run, therefore no further evaluation was necessary.

In response to PADEP's concerns about the sediment, Trinity is providing the following additional information to support the conclusion that sediment impacts are not related to releases of hazardous substances migrating from the Site.

Additional Drainage System and Outfall Investigations

As part of the pre-design investigations, Trinity performed a stormwater investigation that included inspections of the stormwater drains in the vicinity of AOC-S3 to determine if they are hydraulically connected to the Site outfall that discharges to the Old Erie Canal (OF1). An NPDES Storm Water General Permit (Appendix A, RI Report) and a historic Site sketch (Appendix B, RI Report) indicated that stormwater discharged directly to the Old Erie Extension Canal through an outfall named OF-1, which was located to the east of the Main Office/former parking area. Based on the location of this outfall in relation to high COC concentrations found in sediment sample SS-S5, PADEP requested additional investigations to determine if there was a link between observed soil impacts in the Former Operating Areas and COCs in the sediment of the Old Erie Extension Canal, specifically lead, manganese, and zinc.

In response to PADEP's request, Golder performed a Site inspection in March 2011 when vegetation remained in early emergent stages and did not locate any indication of an outfall pipe in this area. In addition, Golder performed a stormwater drainage evaluation in July 2011 as part of the pre-design investigations. During the drainage evaluation, dye was discharged to a stormwater drain (DT-S1) in the former parking area that was believed to discharge directly to outfall OF-1 and the Old Erie Extension Canal. However, despite extensive observation during and after dye discharge, dye was not seen entering the Old Erie Extension Canal, Mathay Run, or any other locations on-Site. Photographs of the dye test and site drainage features are shown on attached Figure 4. As noted in the Cleanup Plan, on-Site observations during the dye tests showed that the outlet pipe from DT-S1 drains to a manhole directly east of OF-1 that redirects the flow on-Site to the south and not towards the Old Erie Extension Canal.

Furthermore, a historic surveyed drawing presented in Appendix D of Revised RI Report shows that the Old Erie Canal Extension was dredged, widened, and diked in 1955 to redirect eastern Greenville stormwater runoff from the Shenango River towards Mathay Run. The drawing also shows that the canal was re-dredged in 1975. However, the drawing does not show an outfall in the vicinity of OF-1 discharging to the canal.

Because there are no known surveyed drawings showing outfall OF-1 entering the canal and no known records indicating the outfall was removed from this location, it is possible that the outfall location was errantly marked on sketches associated with stormwater permits, with the error perpetuated on subsequent documents. Based on the field observations, outfall OF-1 is likely the observed manhole and stormwater from the Site operational areas does not discharge into the Old Erie Extension Canal.

Additional Sediment Data Evaluation

Prior to the June 1, 2012 meeting, Trinity compared the sediment data to additional recognized screening criteria, the Consensus Based Sediment Quality Guidelines (MacDonald, Ingersoll, Berger, 2000), which include both Threshold Effect Concentrations (TECs) and Probable Effect Concentrations (PECs). The TECs are very conservative and similar to the BTAG screening criteria. The PECs are

less conservative. The data and the screening criteria are shown on attached Figure 3. When the sediment data are compared to the less conservative PECs, exceedances remain at location SS-S5 as well as upstream sample locations SS-S3 and SS-S6 for parameters including PAHs, gamma-chlordane, lead, and zinc.

In its Preliminary Data Summary of Urban Storm Water Best Management Practices (USEPA, 1999), the USEPA noted that "Urban runoff was also a significant source of impairment in rivers and lakes. The percent of total impairment attributed to urban runoff is substantial." The "pollutants associated with urban runoff potentially harmful to receiving waters fall into the categories listed below:

- Solids
- Oxygen-demanding substances
- Nitrogen and phosphorus
- Pathogens
- Petroleum hydrocarbons
- Metals
- Synthetic organics."

Table 4-2 of this report, "Sources of Contaminants in Urban Storm Water Runoff" identifies the following contaminant sources:

- Metals - Automobiles, bridges, atmospheric deposition, industrial areas, soil erosion, corroding metal surfaces, combustion processes
- Pesticides and Herbicides - Residential lawns and gardens, roadsides, utility right-of-ways, commercial and industrial landscaped areas, soil wash-off
- Oil and Grease/Hydrocarbons (PAHs) - Roads, driveways, parking lots, vehicle maintenance areas, gas stations, illicit dumping to storm drains

Furthermore, Table 4-7 of this report, "Most Frequently Detected Priority Pollutants in Nationwide Urban Runoff Program Samples (1978-83)" shows the following percentages of pollutants detected in urban runoff:

Metals

- lead, zinc, and copper detected in over 90 percent of the samples
- chromium and arsenic detected in over 50 percent of the samples
- cadmium, nickel, and cyanides detected in over 20 percent of the samples

Pesticides

- chlordane and lindane detected in over 15 percent of the samples

PAHs

- pyrene, phenanthrene, chrysene, and flouranthene detected in at least 10 percent of the samples

Based on the above information, it appears that the impacts seen at locations SS-S3, SS-S5, and SS-S6 are consistent with types of pollutants related to urban runoff.

While there are higher impacts at location SS-S5, they appear to be related to a sediment deposition area in the Old Erie Extension Canal. On-Site observations during the dye study and during a recent site visit show that the section of the Old Erie Extension Canal in the vicinity of SS-S5 is heavily vegetated, which is acting as an impediment to surface water flow (see Figure 4). Therefore, it is very likely that this vegetation causes suspended solids and other pollutants discharging from the Greenville storm sewers into the canal to settle out in this area. However, these conditions would not have been obvious in December 2007 when the RI sediment samples were collected because the vegetation would have undergone seasonal die-off.

Conclusions

Based on the data, field observations, historic site plans, and USEPA stormwater studies, the sediment COCs appear to be related to urban stormwater runoff from eastern Greenville since 1975 and the high COC levels observed in SS-S5 appear to be related to the effects of a heavily vegetated sediment deposition area. Therefore, Trinity's current position is that observed exceedances in sediment are not related to Site activities and no further response actions are warranted for sediment.

At the June 1, 2012 meeting, PADEP noted that the Department has photographs that show an outfall from the Site discharging to the Old Erie Canal in the vicinity of OF-1 and agreed to provide this to Trinity. After Trinity receives this photograph, it will be reviewed and considered along with all the other observations/records to determine whether there is sufficient evidence for changing the current position and addressing off-Site sediments in the Revised Cleanup Plan.

Comment No. 8

Trinity proposes to use a Site-Specific Standard of 3,600 ug/L for Manganese for groundwater migrating off-site. This proposal is contrary to Trinity's conclusion that Mathay Run and the Old Erie Canal act as a hydraulic barrier for contaminants migrating off the South Plant. Moreover, the proposal is specifically prohibited by Paragraph (6)(b) of the 2006 Consent Order and Agreement (COA) which limits Trinity to demonstrating either the Background or the Residential Used Aquifer, Statewide Health Standard at the property line and beyond.

Response to PADEP Comment #8

Trinity acknowledges the requirements of the COA and proposes to use either a SHS or a background standard for manganese in groundwater.

Trinity will perform additional groundwater monitoring to verify the hydraulic barrier and demonstrate attainment of the SHS standard at the point of compliance (e.g., property boundary). If the monitoring indicates exceedances of the SHS at the point of compliance, Trinity will develop a background standard for manganese in accordance with PA 25 §250.707(a)(3). At a minimum, Trinity will use 12 samples from a combination of monitoring wells, including upgradient locations, to determine a background concentration for manganese in groundwater.

Comment No. 9

Monitoring well MW-13 and MW-14 have only one water level measurement which was performed in September 2011. In addition, these monitoring wells had no sampling analysis conducted for Site Contaminants of Concern (COCs). Because these wells were installed after the submittal and subsequent approval of the Remedial Investigation Report, please refer to 25 Pa. Code §250.408(e) for the appropriate number of sampling events as these wells are being utilized for additional site characterization.

Response to PADEP Comment #9

In accordance with the approved Cleanup Work Plan, Trinity collected several rounds of water level data at the South Plant to demonstrate that groundwater is discharging to Mathay Run and that the creek is acting as a hydraulic barrier. This additional data is shown in attached Figure 5 and will be incorporated into the Revised Cleanup Plan. The data was not available for the draft Cleanup Plan that was placed in the repositories for public comment and was not added to the document in the interest of time when the document was finalized for submittal to the PADEP.

While the additional water level data show higher water levels across Mathay Run and indicate a hydraulic barrier may exist, the data is not conclusive. Therefore, Trinity will collect additional groundwater level measurements and analytical data in conjunction with the surface water sampling noted above to further verify that Mathay Run is acting as a hydraulic barrier.

Trinity will perform the sampling and include these results in the Revised Cleanup Plan. If the results indicate that the groundwater is causing exceedances of the surface water criteria or that Site related exceedances are traveling off-Site under Mathay Run, then Trinity will propose modifications to the Cleanup Plan to address these issues.

Comment No. 10

This report was sealed by a Professional Engineer but not a Professional Geologist. The Cleanup Work Plan Approval with Modifications letter (June 7, 2011) included language that directed Trinity to certify the Engineering plans/details in the Cleanup Plan by a Professional Engineer and any groundwater aspects to be certified by a Professional Geologist. Therefore, the revised Cleanup Plan should be certified by, both, a Professional Geologist and a Professional Engineer.

Response to PADEP Comment #10

Trinity will include a certification by a Pennsylvania geologist for the discussions /interpretations of Site groundwater in the Revised Cleanup Plan.

General Comments Not Related to the Above-Mentioned Deficiencies:

Trinity concludes that Mathay Run/Old Erie Canal is a hydraulic barrier which intercepts all groundwater contamination leaving the site; thus, preventing groundwater contamination off-site. However, data should be provided in the report to support this conclusion. At a minimum, Trinity should evaluate this conclusion by providing the following: 1) Two quarterly groundwater samples and elevations from MW-13 and MW-14 for site COCs; 2) Concurrent samples and elevations obtained from monitoring wells adjacent to MW-12 and MW-13; 3) Concurrent stream gauge measurements should be obtained; and 4) Concurrent stream samples (for site related COCs) should be collected.

Response to PADEP General Comments

See response to Comment #9

PATH GOING FORWARD

As agreed during the June 1, 2012 meeting, the following will be performed:

- Trinity will perform additional groundwater and surface water monitoring to demonstrate that Mathay Run is acting as a hydraulic barrier to impacted groundwater and that groundwater is not causing any exceedances of ambient water quality criteria. Assuming

that both low flow and storm flow conditions occur, the additional surface water monitoring will be performed from July through October.

- PADEP will provide photographs and field notes related to the outfall the Department purportedly observed at the Site discharging to the Old Erie Canal Extension. If the photographs/notes clearly confirm a stormwater pathway from the Site to the Old Erie Extension Canal, Trinity will develop a sampling approach and will perform additional sediment evaluations.
- After the above monitoring/evaluations are complete, Trinity will prepare and submit a Revised Cleanup Plan for review and approval by PADEP. Assuming that the groundwater/surface water monitoring is performed in July and October, that there are no further sediment evaluations, and that there is no additional public comment period, Trinity anticipates submitting the Revised Cleanup Plan in January, 2013.
- In the interest of demonstrating continued progress at the South Plant, Trinity will perform appropriate construction permitting tasks in parallel with the preparation and submittal of the Revised Cleanup Plan.

Trinity and Golder believe this correspondence accurately reflects the discussions and agreements made during our June 1, 2012 meeting and serves as a sufficient record of such. If you have any questions or comments regarding the above, please do not hesitate to contact Terry Barrett, of Trinity, or Joe Gormley.

GOLDER ASSOCIATES INC.



Joseph B. Gormley, Jr., P.E.
Senior Consultant, Project Coordinator



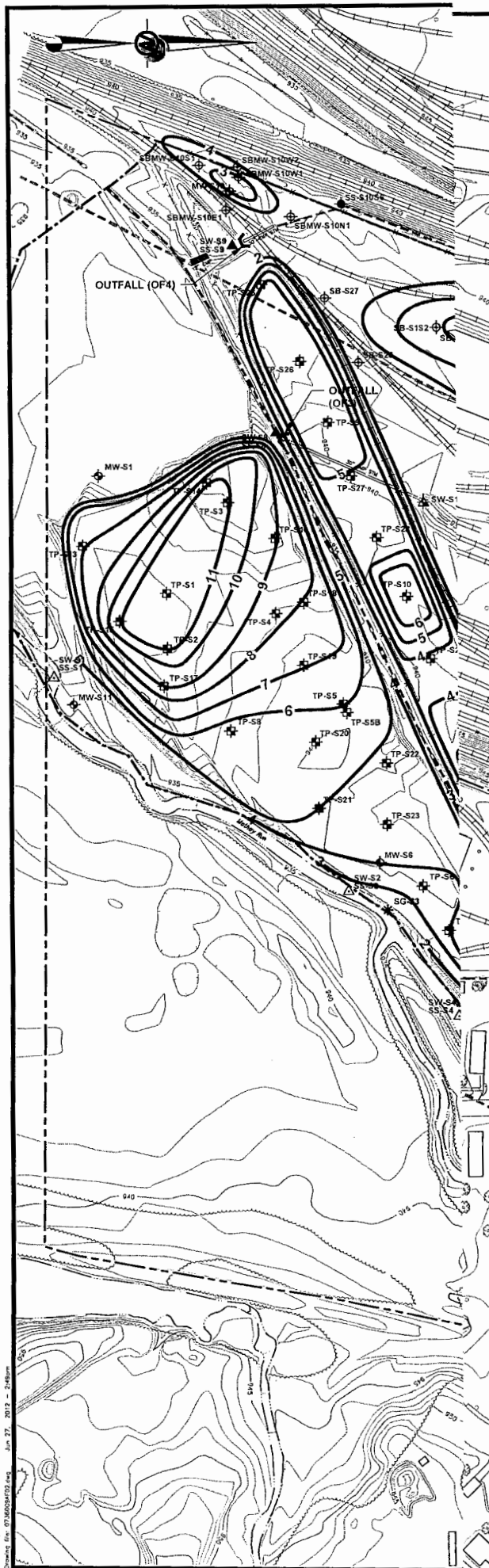
Mark Haney
Project Director

cc: Terry Barrett, P.G., Trinity Industries, Inc. (Electronic Copy)
Grant Dufficy, USEPA
John O'Hara, DEP
Kristie Shimko, DEP
Clem DeLattre, WM
Doug Moorhead, OCC
Kim Bontrager, DEP File

Attachments:

- Figure 1A – Fill Thickness
- Figure 1B – Fill Thickness and Proposed Excavation Depths
- Figure 2 – Groundwater Samples with Concentrations Above Act 2 Standards
- Figure 3 – Sediment Samples with Results Over Screening Criteria
- Figure 4 – Site Drainage Features and Dye Studies
- Figure 5 – Groundwater Contour Maps 2009 and 2011

JBG/MH/bjb



LEGEND

- PROPERTY LINE
- RAILS
- 940 CONTOUR LINE
- DRAINAGE DITCH WITH INTERMITTENT FLOW
- BOROUGH 24-INCH STORM SEWER
- SURVEY BOUNDARY (SEE REFERENCE 1)
- ▲ SURFACE WATER SAMPLE LOCATION
- △ SURFACE WATER (SW) AND SEDIMENT SAMPLE (SS) SAMPLE LOCATION
- ▲ SURFACE WATER (SW) AND SURFACE SOIL (SS) SAMPLE LOCATION
- SURFACE SOIL SAMPLE LOCATION FROM DRAINAGE DITCH
- ⊕ GROUNDWATER MONITORING WELL LOCATION
- ⊕ SOIL BORING LOCATION
- ⊕ TEST PIT LOCATION
- * STAFF GAUGE
- BUILDING OR SLAB
- STREAM OR CREEK
- 5 FILL THICKNESS CONTOUR

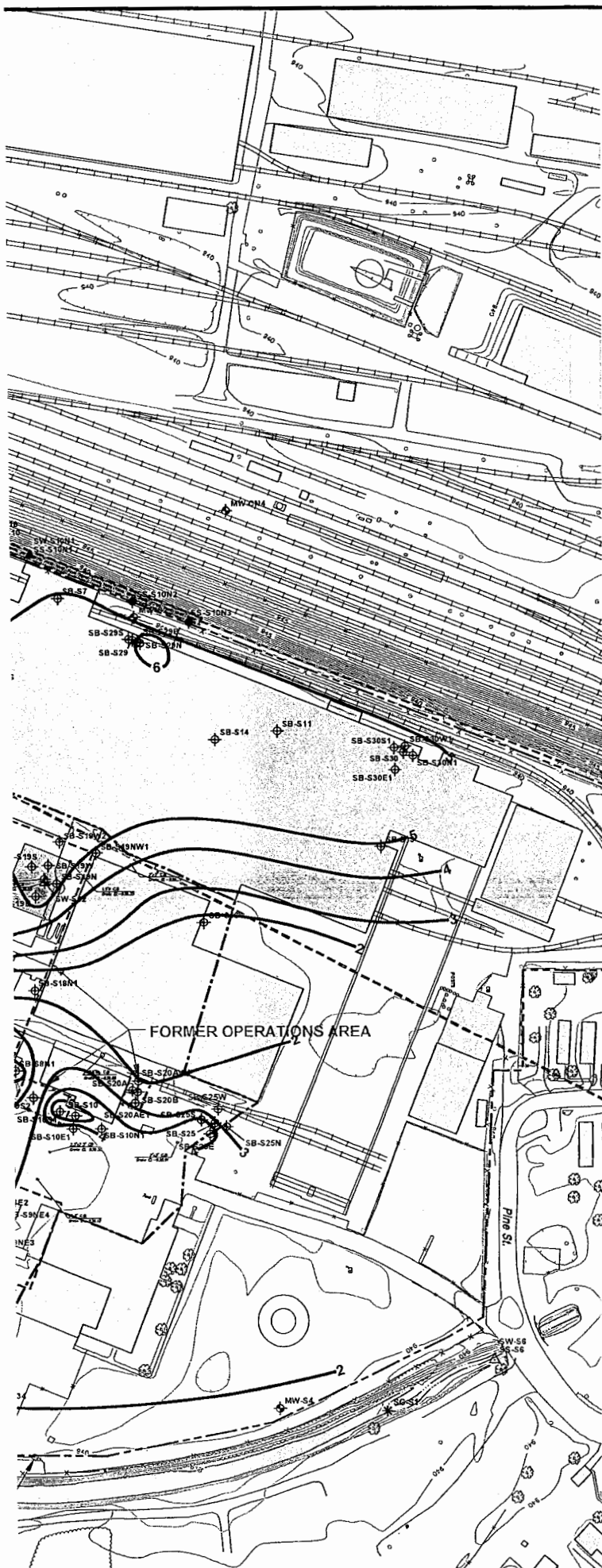
REFERENCES

- 1.) BASE MAP COMPILED FROM DIGITAL CAD FILES 08-3820 GOLDER-N-S.dwg, TITLED "TOPOGRAPHIC SURVEY OF TRINITY INDUSTRIES, INC.," PROVIDED BY HOWELLS & BAIRD, INC., DATED JUNE 25, 2008 (REVISED JULY 15, 2009) AND 11-4417 A.dwg AND 11-4417 B.dwg, TITLED "TOPOGRAPHIC SURVEY FOR TRINITY INDUSTRIES, INC. - SOUTH PLANT," PROVIDED BY HOWELLS & BAIRD, INC., DATED JULY 2011.
- 2.) THE HORIZONTAL COORDINATES SHOWN HEREON ARE REFERENCED TO PENN DOT MONUMENTS AO-86 AND AO-85 (PENNSYLVANIA STATE PLANE COORDINATE SYSTEM - NAD83)
- 3.) LOCATION OF BOROUGH 24-INCH STORM SEWER FROM CHICAGO BRIDGE AND IRON COMPANY DRAWING TITLED "FLOOD CONTROL PLAN IN VICINITY OF C.B & I CO. PLANT," DATED APRIL 22, 1974.
- 4.) PRE-DESIGN INVESTIGATION LOCATIONS WERE TAKEN FROM DIGITAL CAD FILE "08-3820 GOLDER-N-S 9-1-11.dwg," PROVIDED BY HOWELLS & BAIRD, INC., DATED AUGUST 25, 2011.



REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RW
PROJECT						
CLEANUP PLAN RESPONSE TO COMMENTS - SOUTH PLANT TRINITY INDUSTRIES, INC. GREENVILLE, PA						
TITLE						
FILL THICKNESSES						
PROJECT No. 073-6009 FILE No. D736009AF02						
DESIGN	VEF	06/27/12	SCALE	AS SHOWN	REV.	0
CADD	RG	06/27/12	FIGURE 1A			
CHECK	VEF	06/27/12				
REVIEW	JBG	06/27/12				





LEGEND

	PROPERTY LINE
	RAILS
	CONTOUR LINE
	DRAINAGE DITCH WITH INTERMITTENT FLOW
	BOROUGH 24-INCH STORM SEWER
	SURVEY BOUNDARY (SEE REFERENCE 1)
	SURFACE WATER SAMPLE LOCATION
	SURFACE WATER (SW) AND SEDIMENT SAMPLE (SS) SAMPLE LOCATION
	SURFACE WATER (SW) AND SURFACE SOIL (SS) SAMPLE LOCATION
	SURFACE SOIL SAMPLE LOCATION FROM DRAINAGE DITCH
	GROUNDWATER MONITORING WELL LOCATION
	SOIL BORING LOCATION
	TEST PIT LOCATION
	STAFF GAUGE
	BUILDING OR SLAB
	STREAM OR CREEK
	EXTENT OF AREAS TO BE ADDRESSED BY EXCAVATION OF IMPACTED SOILS AND BACKFILLING (SEE NOTE 1)
	EXTENT OF DISPOSAL AREA TO BE CAPPED (SEE NOTE 2)
	2 FT EXCAVATION
	0-2 FT SURFACE SOIL REMOVAL
	4 FT EXCAVATION
	6 FT EXCAVATION
	8 FT EXCAVATION
	6 FT EXCAVATION AND IN-SITU SOIL STABILIZATION FROM 6-20 FT
	FILL THICKNESS CONTOUR

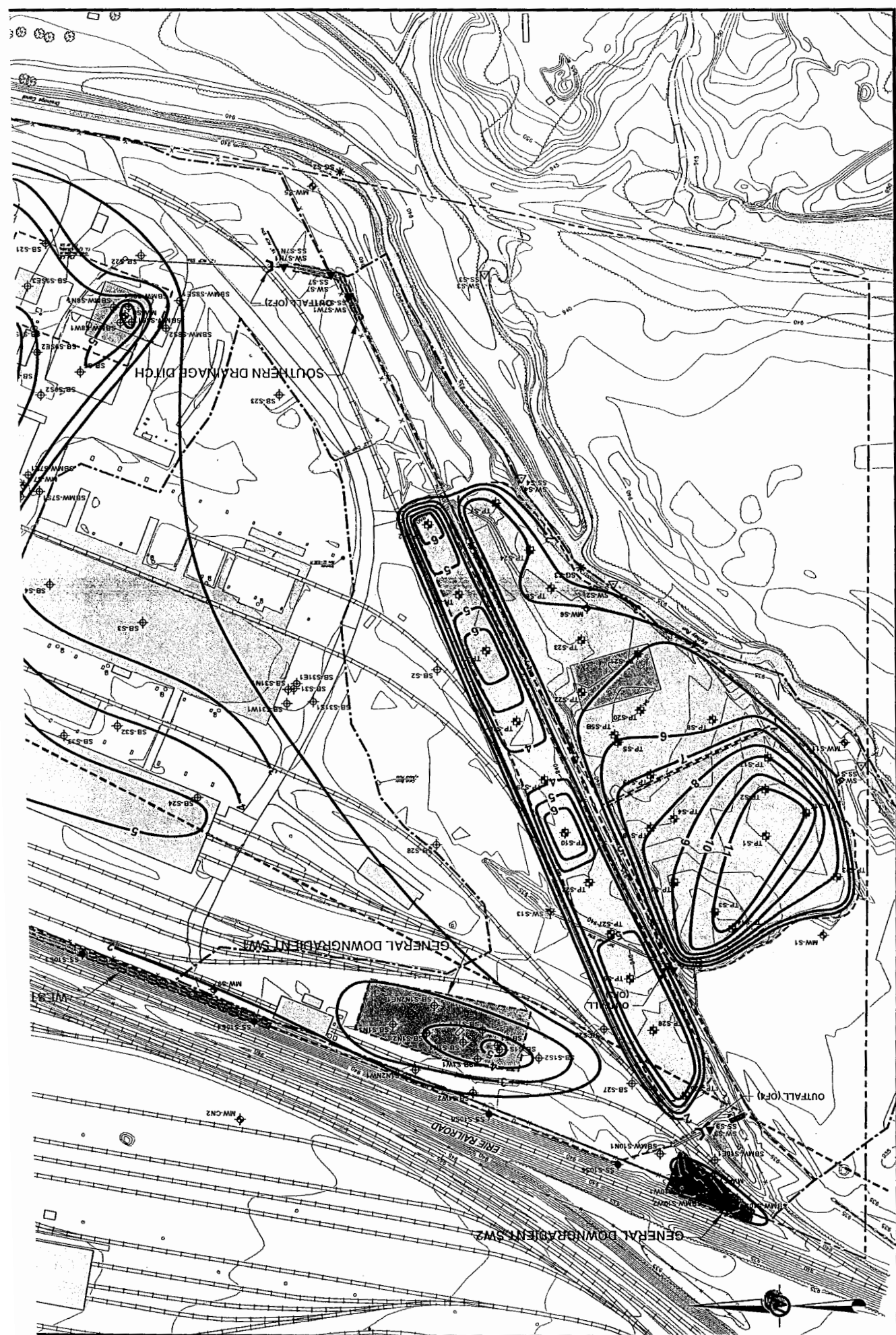
REFERENCES

- 1.) BASE MAP COMPILED FROM DIGITAL CAD FILES 08-3820 GOLDER-N-S.dwg, TITLED "TOPOGRAPHIC SURVEY OF TRINITY INDUSTRIES, INC.," PROVIDED BY HOWELLS & BAIRD, INC, DATED JUNE 25, 2008 (REVISED JULY 15, 2009) AND 11-4417 A.dwg AND 11-4417 B.dwg, TITLED "TOPOGRAPHIC SURVEY FOR TRINITY INDUSTRIES, INC - SOUTH PLANT," PROVIDED BY HOWELLS & BAIRD, INC, DATED JULY 2011.
- 2.) THE HORIZONTAL COORDINATES SHOWN HEREON ARE REFERENCED TO PENN DOT MONUMENTS AD-88 AND AD-85 (PENNSYLVANIA STATE PLANE COORDINATE SYSTEM - NAD83)
- 3.) LOCATION OF BOROUGH 24-INCH STORM SEWER FROM CHICAGO BRIDGE AND IRON COMPANY DRAWING TITLED "FLOOD CONTROL PLAN IN VICINITY OF C.B & I CO. PLANT," DATED APRIL 22, 1974.
- 4.) PRE-DESIGN INVESTIGATION LOCATIONS WERE TAKEN FROM DIGITAL CAD FILE "08-3820 GOLDER-N-S 9-1-11.dwg," PROVIDED BY HOWELLS & BAIRD, INC, DATED AUGUST 25, 2011.



REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RYW
PROJECT CLEANUP PLAN RESPONSE TO COMMENTS - SOUTH PLANT TRINITY INDUSTRIES, INC. GREENVILLE, PA						
TITLE FILL THICKNESS AND PROPOSED EXCAVATION DEPTHS						
<div> Golder Associates Philadelphia USA </div>						
PROJECT No.	073-6009	FILE No.	0736009AFD3			
DESIGN	VEF	06/27/12	SCALE	AS SHOWN	REV.	0
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CHECK	VEF	06/27/12				
REVIEW	JBG	06/27/12				

FIGURE 1B



NOTES

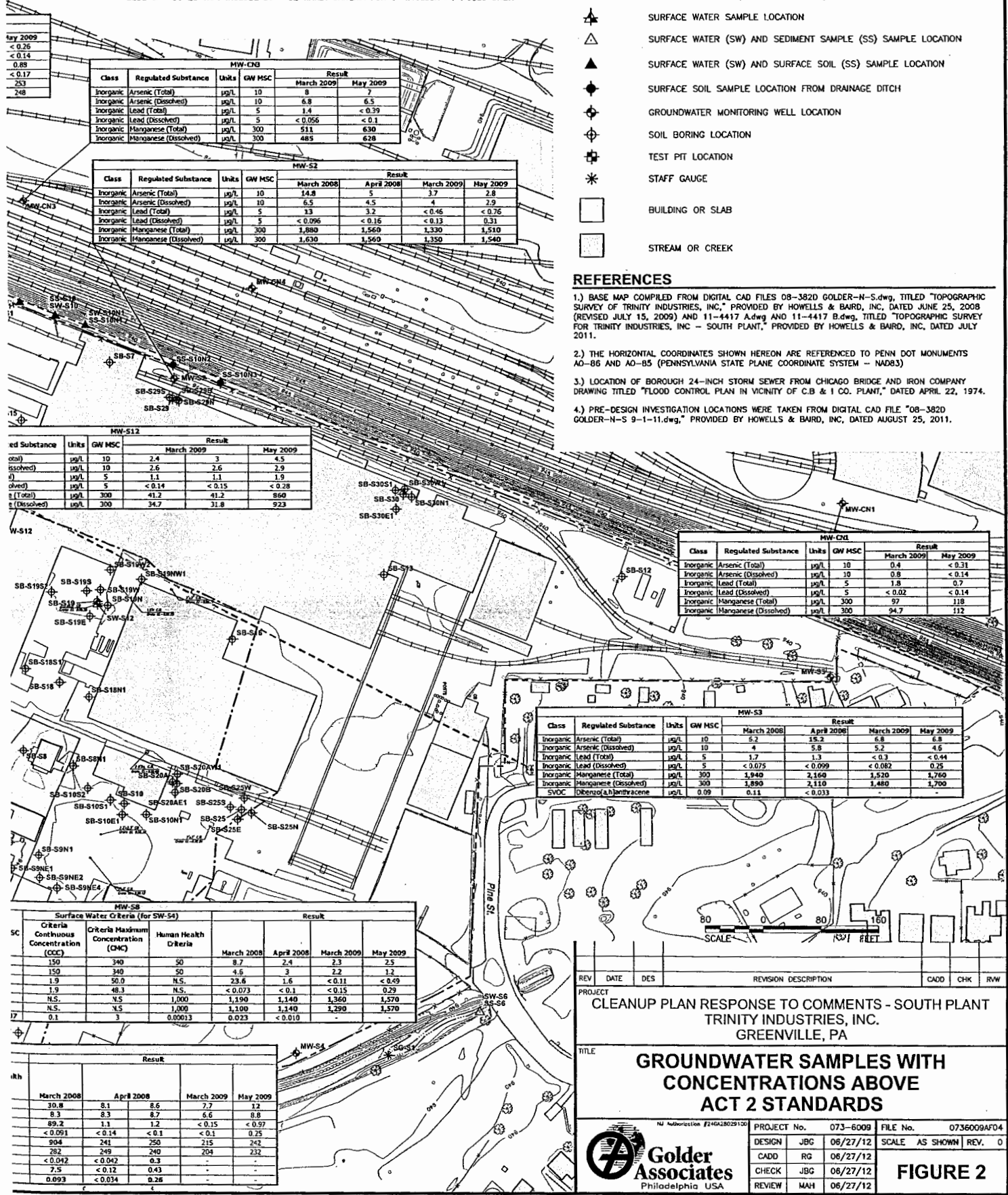
- ANALYTICAL RESULT IN BOLD TYPE FACE INDICATES THAT THE DETECTED CONCENTRATION IS ABOVE THE PENNSYLVANIA STATEWIDE HEALTH STANDARD, MEDIUM-SPECIFIC CONCENTRATIONS (MSCs) FOR ORGANIC AND INORGANIC REGULATED SUBSTANCES IN GROUNDWATER FOR RESIDENTIAL, USED AQUIFERS, TDS \leq 2,500 PPM.
- THE RESULTS FOR BOTH PRIMARY AND DUPLICATE SAMPLES WHEN COLLECTED ARE SHOWN FOR THE APPLICABLE SAMPLE LOCATION AND SAMPLING PERIOD.
- THE SURFACE WATER HUMAN HEALTH CRITERIA NOTED FOR MANGANESE ONLY APPLIES TO PUBLIC WATER SUPPLY (PWS) USES.
- WELLS WITH THE POTENTIAL TO DISCHARGE TO SURFACE WATER BODIES ARE SHOWN IN BLUE CHEMBOXES THAT INCLUDE SURFACE WATER CRITERIA FOR COMPARISON PURPOSES ONLY.

LEGEND

- PROPERTY LINE
- RAILS
- 940 --- CONTOUR LINE
- DRAINAGE DITCH WITH INTERMITTENT FLOW
- BOROUGH 24-INCH STORM SEWER
- SURVEY BOUNDARY (SEE REFERENCE 1)
- ▲ SURFACE WATER SAMPLE LOCATION
- △ SURFACE WATER (SW) AND SEDIMENT SAMPLE (SS) SAMPLE LOCATION
- ▲ SURFACE WATER (SW) AND SURFACE SOIL (SS) SAMPLE LOCATION
- ◆ SURFACE SOIL SAMPLE LOCATION FROM DRAINAGE DITCH
- ⊕ GROUNDWATER MONITORING WELL LOCATION
- ⊕ SOIL BORING LOCATION
- ⊕ TEST PIT LOCATION
- * STAFF GAUGE
- BUILDING OR SLAB
- STREAM OR CREEK

REFERENCES

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May 2009
< 0.26
< 0.14
0.85
< 0.17
253
248

MW-CN3						
Class	Regulated Substance	Units	GW MSC	Result		
Inorganic	Arsenic (Total)	µg/L	10	March 2009	May 2009	
Inorganic	Arsenic (Dissolved)	µg/L	10	6.8	6.5	
Inorganic	Lead (Total)	µg/L	5	1.4	< 0.39	
Inorganic	Lead (Dissolved)	µg/L	5	< 0.056	< 0.1	
Inorganic	Manganese (Total)	µg/L	300	511	630	
Inorganic	Manganese (Dissolved)	µg/L	300	485	628	

MW-S2							
Class	Regulated Substance	Units	GW MSC	Result			
				March 2008	April 2008	March 2009	May 2009
Inorganic	Arsenic (Total)	µg/L	10	14.8	5	3.7	2.8
Inorganic	Arsenic (Dissolved)	µg/L	10	6.5	4.5	4	2.9
Inorganic	Lead (Total)	µg/L	5	13	3.2	< 0.46	< 0.76
Inorganic	Lead (Dissolved)	µg/L	5	< 0.096	< 0.13	< 0.13	0.31
Inorganic	Manganese (Total)	µg/L	300	1,880	1,560	1,330	1,510
Inorganic	Manganese (Dissolved)	µg/L	300	1,630	1,560	1,350	1,540


MW-S12					
Regulated Substance	Units	GW MSC	Result		
Arsenic (Total)	µg/L	10	March 2009	3	4.5
Arsenic (Dissolved)	µg/L	10	2.4	3	1.9
Lead (Total)	µg/L	5	2.6	1.1	1.9
Lead (Dissolved)	µg/L	5	1.1	< 0.15	< 0.28
Manganese (Total)	µg/L	300	41.2	41.2	860
Manganese (Dissolved)	µg/L	300	34.7	31.8	923

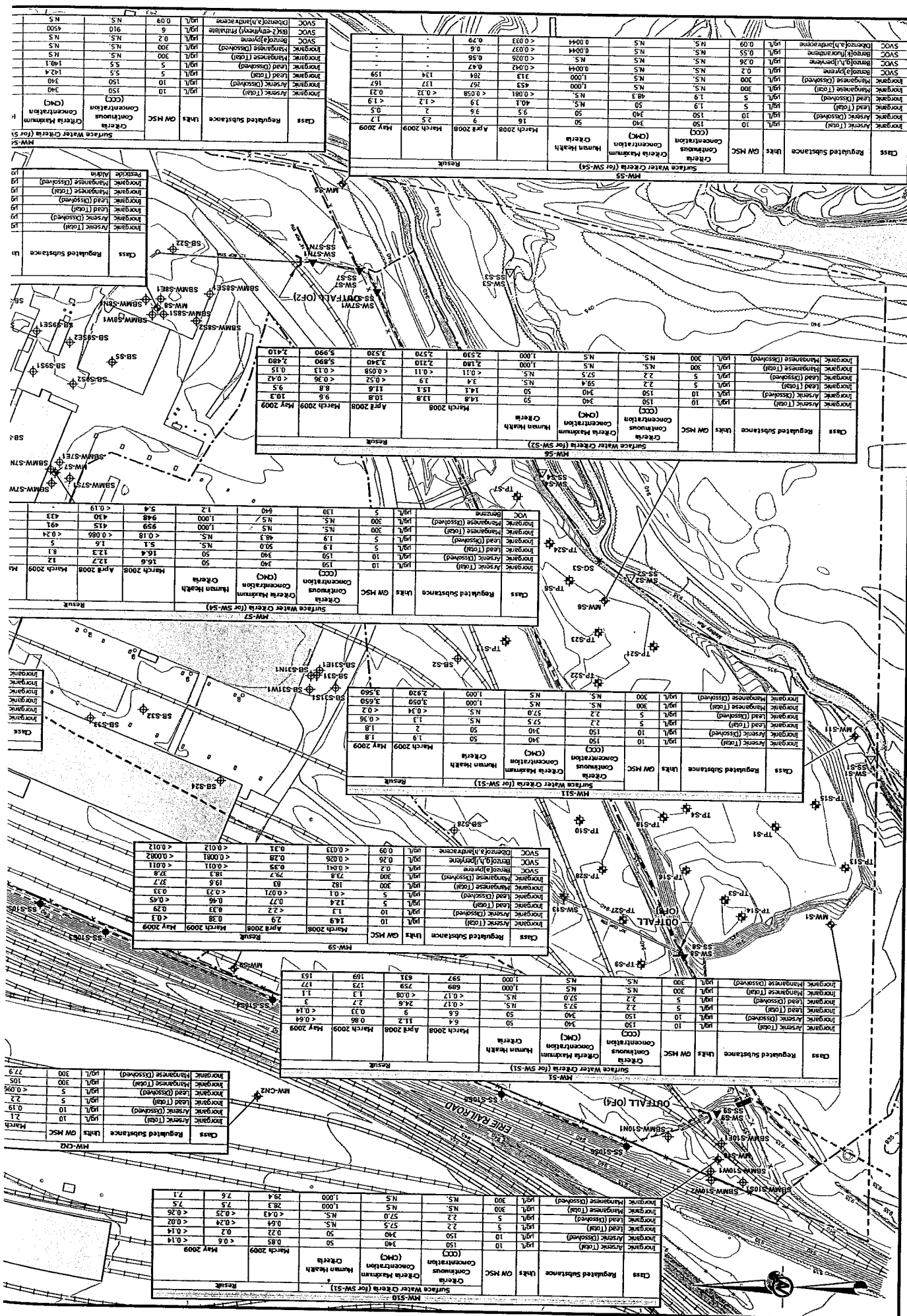
MW-CN1						
Class	Regulated Substance	Units	GW MSC	Result		
Inorganic	Arsenic (Total)	µg/L	10	March 2009	May 2009	
Inorganic	Arsenic (Dissolved)	µg/L	10	0.4	< 0.31	
Inorganic	Lead (Total)	µg/L	5	0.8	< 0.14	
Inorganic	Lead (Dissolved)	µg/L	5	1.8	0.7	
Inorganic	Manganese (Total)	µg/L	300	< 0.02	< 0.14	
Inorganic	Manganese (Dissolved)	µg/L	300	97	118	
Inorganic	Manganese (Dissolved)	µg/L	300	94.7	112	

MW-S3							
Class	Regulated Substance	Units	GW HSC	Result			
				March 2008	April 2008	March 2009	May 2009
Inorganic	Arsenic (Total)	µg/L	10	5.2	15.2	6.8	6.8
Inorganic	Arsenic (Dissolved)	µg/L	10	4	5.8	5.2	4.6
Inorganic	Lead (Total)	µg/L	5	1.7	1.3	< 0.3	< 0.44
Inorganic	Lead (Dissolved)	µg/L	5	< 0.075	< 0.099	< 0.082	0.25
Inorganic	Manganese (Total)	µg/L	300	1,940	2,160	1,520	1,760
Inorganic	Manganese (Dissolved)	µg/L	300	1,890	2,110	1,480	1,700
SVOC	Debenzylalbenzene	µg/L	0.09	0.11	< 0.033		

Surface Water Criteria (for SW-S4)						
Criteria Continuous Concentration (CCC)	Criteria Maximum Concentration (CMC)	Human Health Criteria	Result			
150	340	50	March 2008	April 2008	March 2009	May 2009
150	340	50	8.7	2.4	2.3	2.5
1.9	50.0	N.S.	4.6	3	2.2	1.2
1.9	46.3	N.S.	23.6	1.6	< 0.11	< 0.49
N.S.	1,000	1,000	< 0.073	< 0.1	< 0.15	0.29
N.S.	1,000	1,000	1,190	1,140	1,360	1,570
N.S.	1,000	1,000	1,100	1,140	1,290	1,570
0.1	3	0.00013	0.023	< 0.019		

Result			
March 2008	April 2008	March 2009	May 2009
30.8	8.1	8.6	7.7
8.3	8.3	8.7	6.6
89.2	1.1	1.2	< 0.15
< 0.091	< 0.14	< 0.1	0.25
904	241	250	215
282	249	240	204
< 0.042	< 0.042	0.3	
7.5	< 0.12	0.43	
0.093	< 0.034	0.26	

REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RW
PROJECT						
CLEANUP PLAN RESPONSE TO COMMENTS - SOUTH PLANT TRINITY INDUSTRIES, INC. GREENVILLE, PA						
TITLE						
GROUNDWATER SAMPLES WITH CONCENTRATIONS ABOVE ACT 2 STANDARDS						
 Golder Associates Philadelphia USA		PROJECT No. 073-6009 DESIGN JBC 06/27/12 CADD RG 06/27/12 CHECK JBC 06/27/12 REVIEW MAH 06/27/12	FILE No. 0736009AF04 SCALE AS SHOWN REV. 0	FIGURE 2		



NOTES

- RESULTS ABOVE THE EPA REGION III BTAG FRESHWATER SEDIMENT SCREENING BENCHMARKS ARE SHOWN IN **BOLD**.
- YELLOW HIGHLIGHTED VALUES ARE ABOVE PEC LEVEL.

LEGEND

- PROPERTY LINE
- RAILS
- 940 --- CONTOUR LINE
- DRAINAGE DITCH WITH INTERMITTENT FLOW
- BOROUGH 24-INCH STORM SEWER
- SURVEY BOUNDARY (SEE REFERENCE 1)
- ▲ SURFACE WATER SAMPLE LOCATION
- △ SURFACE WATER (SW) AND SEDIMENT SAMPLE (SS) SAMPLE LOCATION
- ▲ SURFACE WATER (SW) AND SURFACE SOIL (SS) SAMPLE LOCATION
- ◆ SURFACE SOIL SAMPLE LOCATION FROM DRAINAGE DITCH
- ⊕ GROUNDWATER MONITORING WELL LOCATION
- ⊕ SOIL BORING LOCATION
- ⊕ TEST PIT LOCATION
- * STAFF GAUGE
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Location		Consensus-Based Sediment Quality Guidelines		SS-S5	
Start Depth:		Quality Guidelines		0.1	
End Depth:		Threshold Effect		12/19/2007	
Date Sampled:		Concentration (TEC)		N	
Sample Type Code:		Probable Effect Concentration (PEC)		Result	
Parameter	Units	Region III FW BTAG	Region III FW BTAG	Region III FW BTAG	Region III FW BTAG
SVOCs					
Acephenanthrene	mg/kg	0.0059	0.0059	0.27	J 0.24
Acenaphthylene	mg/kg	0.0572	0.0572	1.4	J 0.23
Benzo(a)anthracene	mg/kg	0.108	0.108	2.7	J 0.16
Benzo(a)pyrene	mg/kg	0.15	0.15	1.45	J 0.13
Benzo(b)fluoranthene	mg/kg	0.17	0.17	3.2	J 0.14
Benzo(k)fluoranthene	mg/kg	0.24	0.24	3.3	J 0.13
Benzo(e)pyrene	mg/kg	0.18	0.18	2.9	J 0.32
Benzo(g,h,i)perylene	mg/kg	0.166	0.166	3.7	J 0.16
Chrysene	mg/kg	0.033	0.033	0.54	J 0.28
Dibenz(a,h)anthracene	mg/kg	0.423	0.423	8.3	J 0.27
Fluoranthene	mg/kg	0.0774	0.0774	1.2	J 0.2
Fluorene	mg/kg	0.0774	0.0774	0.536	J 0.2
Indeno(1,2,3-cd)pyrene	mg/kg	0.017	0.017	2.6	J 0.15
2-Methylnaphthalene	mg/kg	0.0202	0.0202	0.23	J 0.23
Naphthalene	mg/kg	0.176	0.176	0.22	J 0.2
Phenanthrene	mg/kg	0.204	0.204	1.17	J 0.2
Pyrene	mg/kg	0.195	0.195	1.52	J 0.23
Total PAHs	mg/kg	1.61	1.61	22.8	24.46
Pesticides					
Dechlor	mg/kg	0.0019	0.0019	0.0618	J 0.0015
alpha-Chloroane	mg/kg	0.00324	0.00324	0.0176	J 0.0013
gamma-Chloroane	mg/kg	0.00324	0.00324	0.0176	J 0.0013
PCBs					
Aroclor 1254	mg/kg	0.0058	0.0058	0.076	0.14
Aroclor 1260	mg/kg	0.0058	0.0058	0.076	0.093
Metals					
Arsenic	mg/kg	9.8	9.79	33	L 0.041
Cadmium	mg/kg	0.99	0.99	4.98	2.3
Chromium	mg/kg	43.4	43.4	111	59.1
Copper	mg/kg	31.6	31.6	149	88.7
Iron	mg/kg	20000	20000	34200	0.72
Lead	mg/kg	35.8	35.8	128	216
Manganese	mg/kg	469	469	414	J 0.0085
Nickel	mg/kg	22.7	22.7	48.8	33.7
Zinc	mg/kg	121	121	459	872
Cyanide	mg/kg	0.1	0.1	5.7	0.24
Total Organic Carbon	mg/kg	N.S.	N.S.	55803	167

Location		Consensus-Based Sediment Quality Guidelines		SS-S6	
Start Depth:		Quality Guidelines		0.1	
End Depth:		Threshold Effect		12/19/2007	
Date Sampled:		Concentration (TEC)		N	
Sample Type Code:		Probable Effect Concentration (PEC)		Result	
Parameter	Units	Region III FW BTAG	Region III FW BTAG	Region III FW BTAG	Region III FW BTAG
SVOCs					
Anthracene	mg/kg	0.0572	0.0572	0.99	J 0.12
Benzo(a)anthracene	mg/kg	0.108	0.108	1.8	J 0.063
Benzo(a)pyrene	mg/kg	0.15	0.15	1.45	J 0.065
Benzo(b)fluoranthene	mg/kg	0.17	0.17	1.4	J 0.071
Benzo(k)fluoranthene	mg/kg	0.24	0.24	0.99	J 0.067
Chrysene	mg/kg	0.033	0.033	1.29	J 0.083
Fluoranthene	mg/kg	0.0774	0.0774	2.23	J 0.14
Fluorene	mg/kg	0.0774	0.0774	0.536	J 0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.017	0.017	1.2	J 0.074
Phenanthrene	mg/kg	0.204	0.204	1.17	J 0.1
Pyrene	mg/kg	0.195	0.195	1.52	J 0.13
Total PAHs	mg/kg	1.61	1.61	22.8	14.68
Metals					
Iron	mg/kg	20000	20000	21600	0.37
Lead	mg/kg	35.8	35.8	38.1	J 0.0043
Manganese	mg/kg	469	469	858	0.018
Zinc	mg/kg	121	121	459	L 0.015
Cyanide	mg/kg	0.1	0.1	0.49	J 0.12
Total Organic Carbon	mg/kg	N.S.	N.S.	5210	84.8

REV DATE DES REVISION DESCRIPTION CADD CHK RW

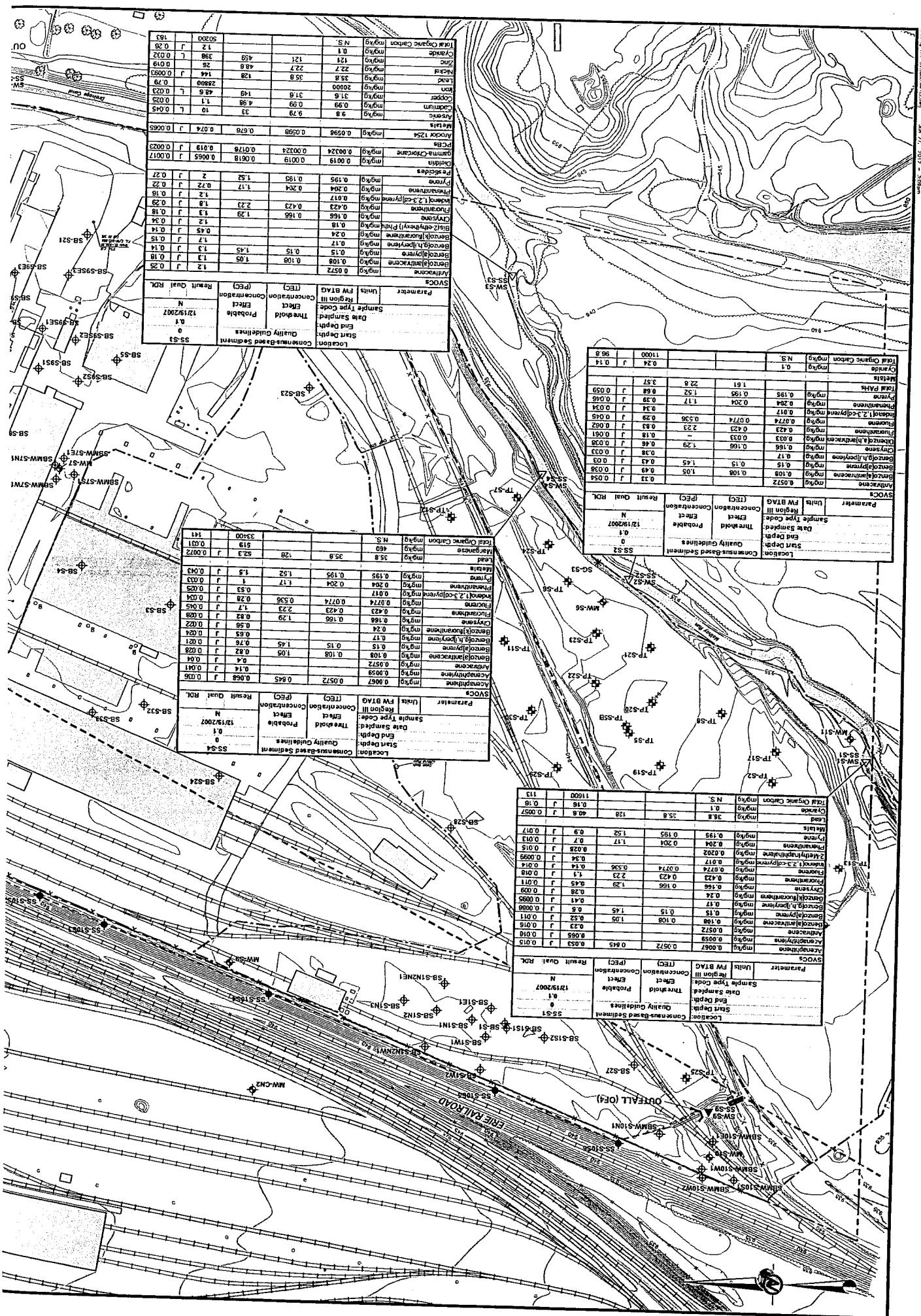
PROJECT CLEANUP PLAN RESPONSE TO COMMENTS - SOUTH PLANT TRINITY INDUSTRIES, INC. GREENVILLE, PA

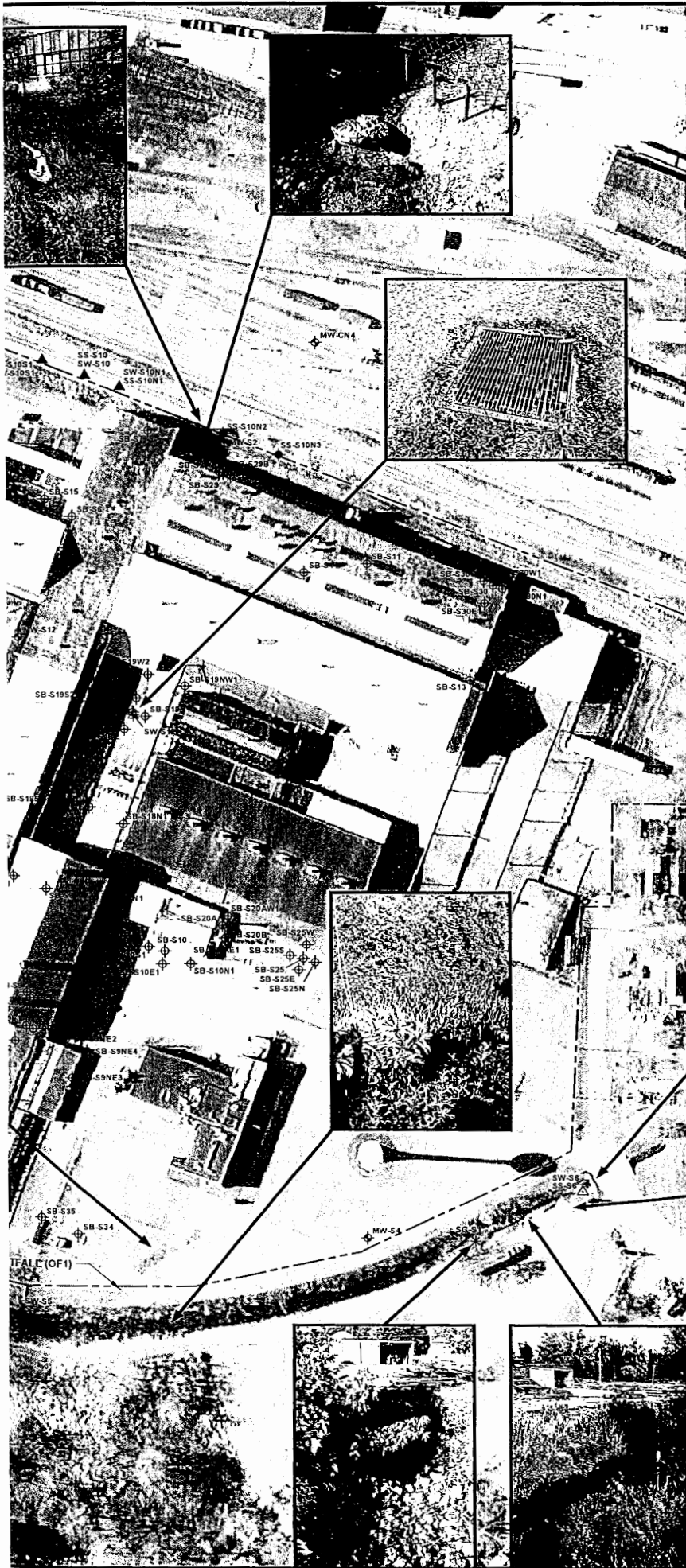
TITLE SEDIMENT SAMPLES WITH RESULTS OVER SCREENING CRITERIA

PROJECT No. 073-6009		FILE No. 0736009AF05	
DESIGN	JBC	06/27/12	SCALE AS SHOWN
CADD	RG	06/27/12	REV. 0
CHECK	JBC	06/27/12	
REVIEW	MAH	06/27/12	



FIGURE 3



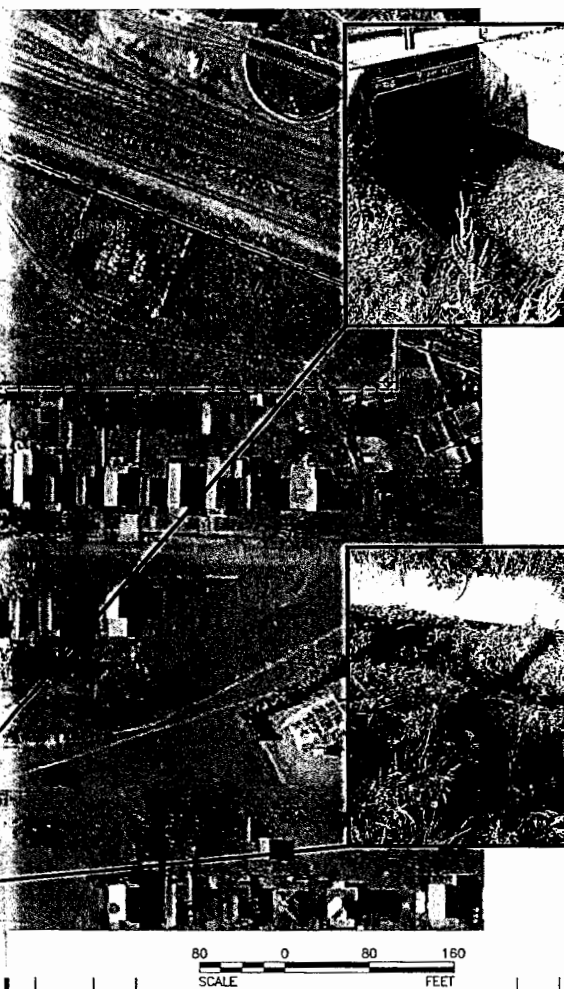


LEGEND

- PROPERTY LINE
- ▲ SURFACE WATER SAMPLE LOCATION
- △ SURFACE WATER (SW) AND SEDIMENT SAMPLE (SS) SAMPLE LOCATION
- ▲ SURFACE WATER (SW) AND SURFACE SOIL (SS) SAMPLE LOCATION
- ◆ SURFACE SOIL SAMPLE LOCATION FROM DRAINAGE DITCH
- ⊕ GROUNDWATER MONITORING WELL LOCATION
- ⊙ SOIL BORING LOCATION
- ⊕ TEST PIT LOCATION
- * STAFF GAUGE

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- 3.) AERIAL ORTHOPHOTO TILES, DATED 2005, FROM THE PENNSYLVANIA SPATIAL DATA ACCESS WEBSITE AT <http://www.psdpa.psu.edu>.



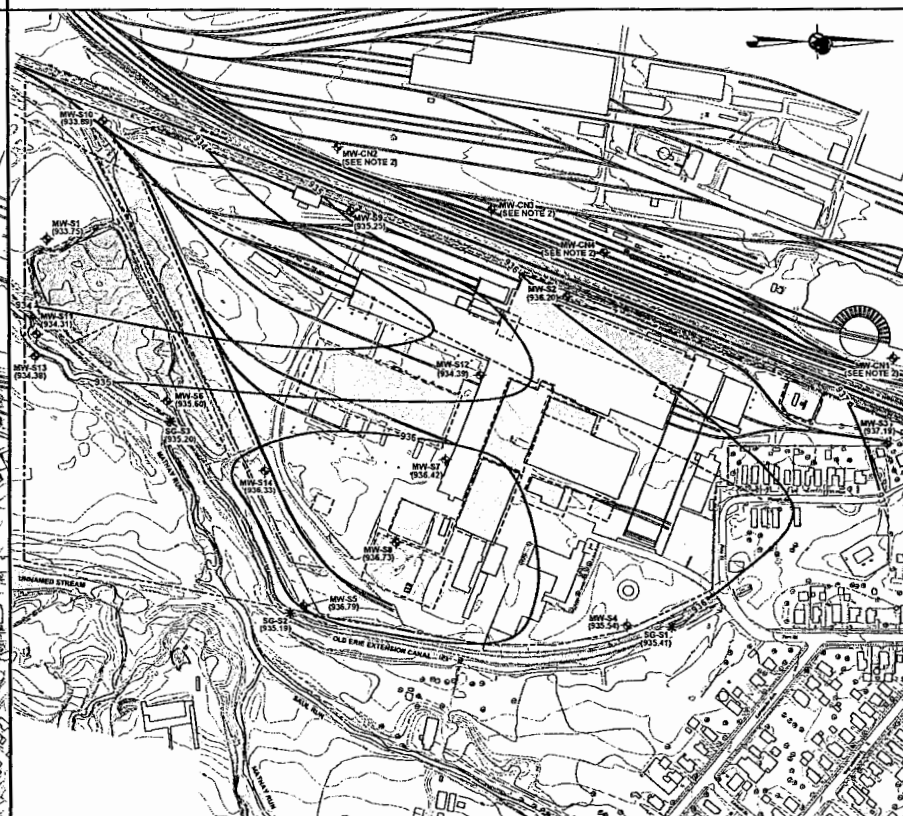
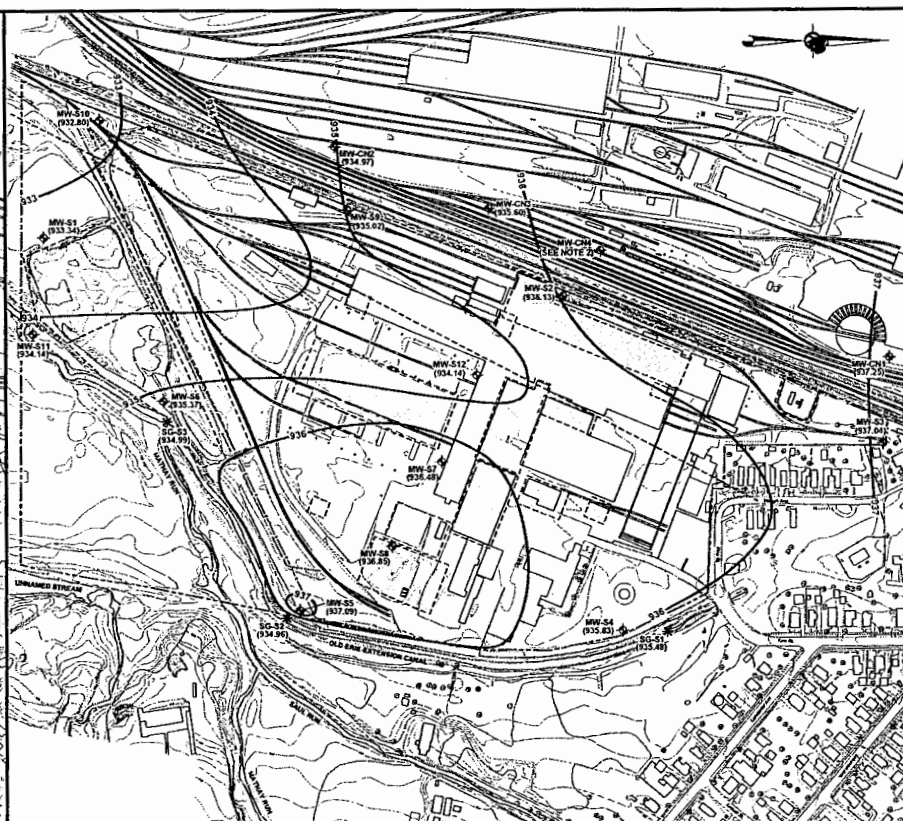
REV	DATE	DES	REVISION DESCRIPTION	CADD	CHK	RWM
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CLEANUP PLAN RESPONSE TO COMMENTS - SOUTH PLANT
TRINITY INDUSTRIES, INC.
GREENVILLE, PA

PROJECT			TITLE		
CLEANUP PLAN RESPONSE TO COMMENTS - SOUTH PLANT			SITE DRAINAGE FEATURES AND DYE STUDIES		
PROJECT No. 073-6009			FILE No. 0736009AF01		
DESIGN	JBG	06/27/12	SCALE	AS SHOWN	REV. 0
CADD	RG	06/27/12	FIGURE 4		
CHECK	JBG	06/27/12			
REVIEW	MAH	06/27/12			



NY Authorization #2140-28029100



RE, NO WATER LEVEL MEASUREMENTS FROM

2009. THEREFORE, NO WATER LEVEL
S AND MW-CN# EXISTING WELLS LOCATED ON
: LEVEL MEASUREMENT EVENT.

28. THEREFORE, NO WATER LEVEL

REVISIONS TO THOSE MAPS SUBMITTED IN 2008

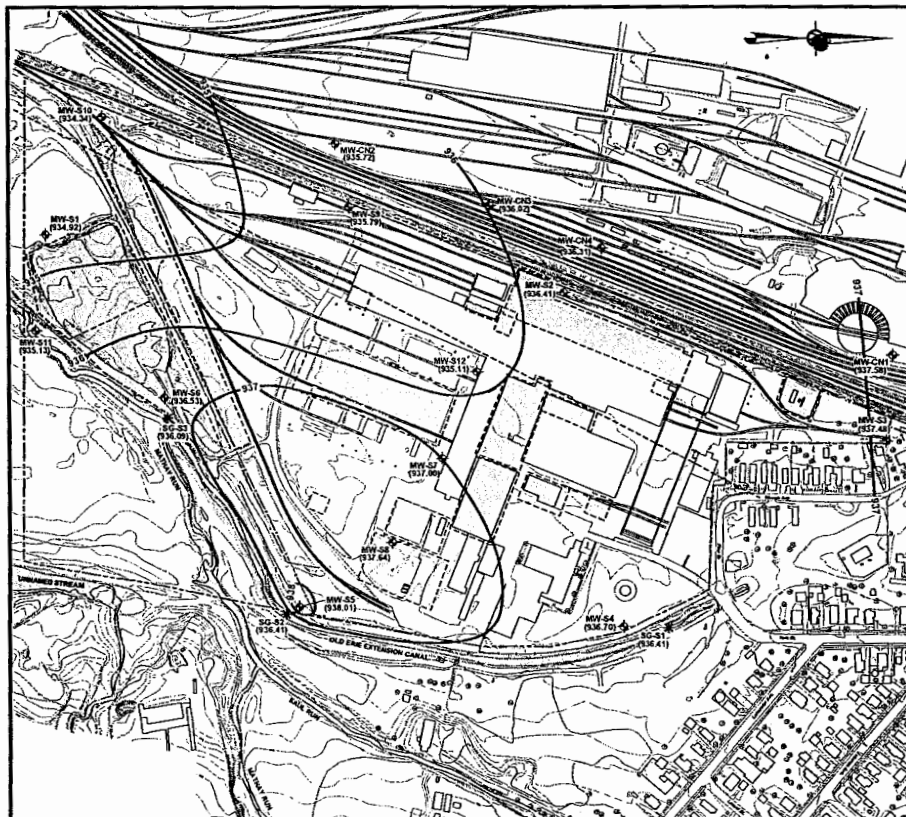
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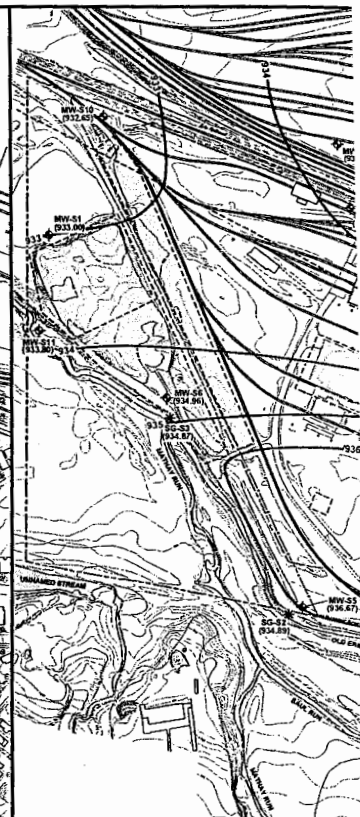
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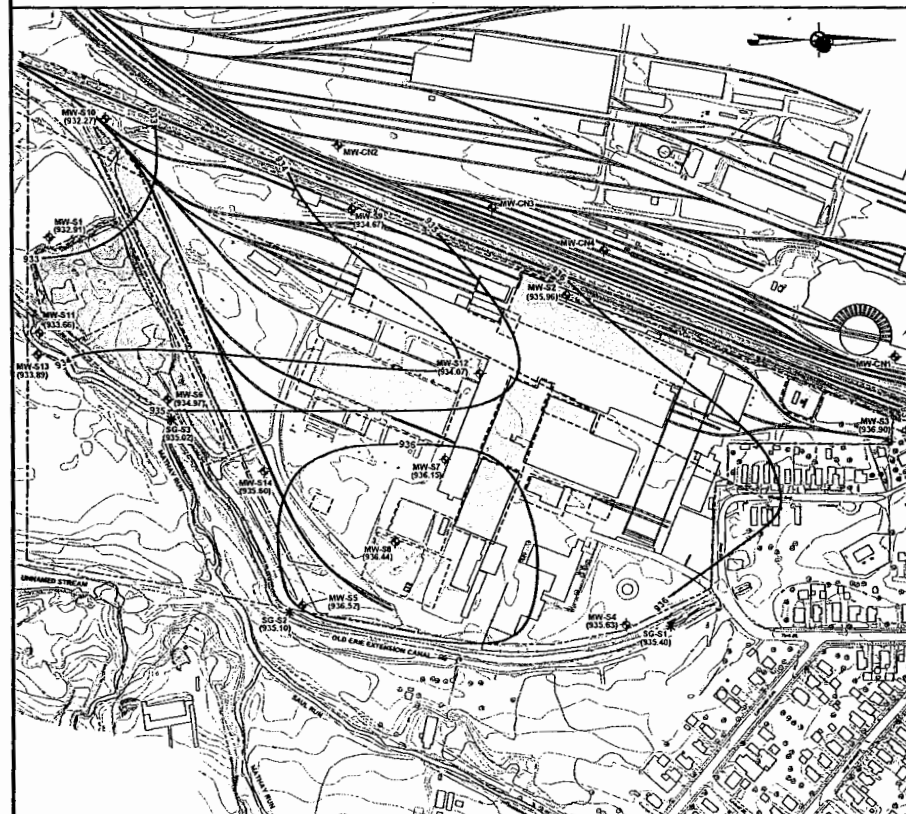
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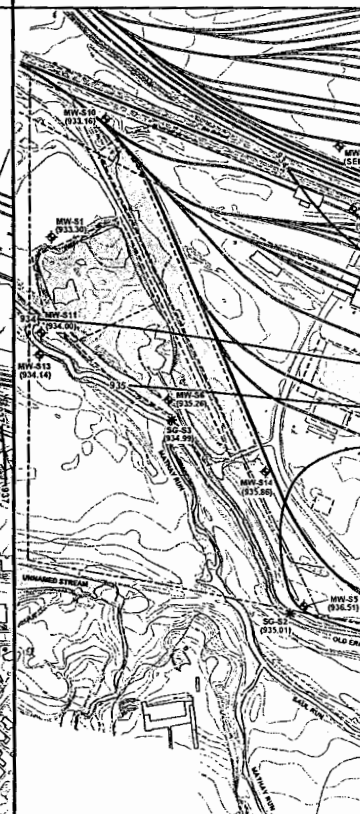
GROUNDWATER CONTOUR MAP
MARCH 2009



GRO



GROUNDWATER CONTOUR MAP
SEPTEMBER 2011



GROUND

LEGEND

	PROPERTY LINE		DRAINAGE DITCH WITH INTERMITTENT FLOW
	GROUNDWATER MONITORING WELL LOCATION		24-INCH STORM SEWER
	STAFF GAUGE		GROUNDWATER CONTOUR
	POTENTIAL AREA OF CONCERN (AOC) BOUNDARY		GROUNDWATER ELEVATION
	STREAM OR CANAL		

NOTES

- 1.) MW-S10, MW-S11, and MW-S12 installed in FEBRUARY 2008. THESE WELLS IN APRIL AND SEPTEMBER 2008.
- 2.) MW-CM1 and MW-CM2 installed ON ADJACENT PROPERTY MEASUREMENTS FROM THESE WELLS IN APRIL AND SEPTEMBER 2008. MW-CM1 DECOMMISSIONED PRIOR TO JUNE 2008.
- 3.) STAFF GAUGES SG-S1, SG-S2, AND SG-S3 installed IN 5/08 MEASUREMENTS WERE AVAILABLE.
- 4.) THE GROUNDWATER CONTOUR MAPS FROM APRIL 2008 TO JULY 2008 WERE SUPPLEMENTAL INVESTIGATION WORK PLAN DATED 04/08.
- 5.) MW-S13 AND MW-S14 installed IN AUGUST 2011.
- 6.) ACCESS NOT AVAILABLE FOR MONITORING WELLS MW-CM1, MW-CM2.